CBNG Task Force Meeting
May 4, 2006
Casper, Wyoming – Wyoming Oil and Gas Commission

Welcome, Introductions and Purpose of Task Force

Mary Flanderka opened with introductions of Task Force (TF) members and Governor's staff. In attendance were: TF members - Helen Jones, Bob Ruby, Joseph Olson, Kermit Brown, Pat Childers, Thomas Clayson, John Corra, Mark Doelger, Kit Jennings, Kurt Kelly, Don Likwartz, John Pope, Chuck Townsend, Patrick Tyrrell; Aaron Clark, CBM TF Coordinator; Mary Flanderka, State Planning Coordinator; Mike Barrash, Attorney General's office; Karen Hayes, Governor's office.

Mary Flanderka discussed the purpose of the TF and presented the web site information. Aaron Clark explained the purpose of the first TF meeting and described the presentations from each CBM regulatory agency

Agency Presentations – one of the primary purposes of the first TF meeting was to hear from the various state agencies about their regulatory programs for managing CBM produced water and public concerns. A summary of the agency presentations is provided below. Copies of the presentations have been provided to the TF members under separate cover and are available on the TF web page.

Wyoming Oil and Gas Conservation Commission – Don Likwartz

1. The vast majority of CBM development occurring in the state is in the Powder River Basin (PRB) in Campbell, Sheridan and Johnson Counties. By the end of 2006 23,750 CBM wells had been drilled in the PRB. Of the total wells, 15,500 wells were producing and 6,053 were shut-in.
2. Over 3,000 of the shut-in PRB wells have never produced – 53 percent of those are waiting on development of water management plans, 39 percent are waiting on infrastructure (i.e., pipeline connections) and 8 percent are waiting on BLM permits.
3. CBM production occurs from 15 coal seams at varying depths across the basin. Water quality varies significantly across these coal seams.
4. Cumulative production from the PRB from 1996 through 2005 was 1,900 billion cubic feet of gas and about 3,500 million barrels of water.
5. In January, 2006 CBM production from the PRB was 950 million cubic feet of gas per day and 1.5 million barrels of water per day.
6. On average, CBM wells in the PRB produce about 1.85 barrels of water for every thousand cubic feet of gas produced.
7. The WOGCC currently estimates that total gas recovery from the PRB will be about 8 trillion cubic feet. Total water production is expected to be about 15 billion barrels of water.
8. Atlantic Rim (Carbon County) is expected to become the next major CBM development in Wyoming. In addition to the PRB and Atlantic Rim, there are 9 additional pilot programs occurring elsewhere in the state. However, not enough drilling has been done in these areas to predict development potential.

Wyoming Department of Revenue – Craig Grenvik

1. Coal bed methane production is a significant source of revenue to the State of Wyoming as well as county and local governments.
2. In 2004, ad valorem production tax collections in Johnson County from CBM was about $5.7 million compared to approximately $0.5 million in 2002; in Sheridan County in 2004 $11.8 million in ad valorem production taxes were collected compared to less than $5 million in 2002; Campbell County collected over $57 million in ad valorem production taxes in 2004 compared to less than $30 million in 2002.
3. Ad valorem production tax collections are distributed to a number of taxing entities within each county including fire protection districts, cemeteries, health care, school districts, community colleges, weed and pest districts and conservation districts.
4. Total CBM severance tax collected by the State of Wyoming in 2004 was $74.2 million. Of the severance tax collected, $4.2 million was distributed to cities, towns and counties; $23 million was distributed to the general fund; $31 million was distributed to the mineral trust fund; and $7 million was distributed to the budget reserve.

Wyoming Game and Fish Department – Mike Stone

1. The PRB is a unique aquatic ecosystem which supports a diverse assemblage of native species, particularly fish.
2. The Game and Fish Department completed limited sampling in the PRB in 2004 and 2005 including 8 sites on the mainstem Powder River, 2 sites on Crazy Woman Creek and 1 site on the South Fork Powder River. Additional monitoring will occur in the future.
3. Twenty species of fish have been collected from the PRB – sport fisheries are primarily limited to channel catfish
4. Several species in the PRB are considered rare in Wyoming including the flathead chub, plains minnow, mountain sucker, goldeneye, shovelnose sturgeon, and sturgeon chub
5. The sturgeon chub is of particular concern because it was proposed for listing pursuant to the Endangered Species Act. Although the U.S. Fish and Wildlife Service declined to list the species, concern for the fish remains.
6. The Game and Fish Department considers the PRB a high priority watershed because of the number of and relative rarity of the native species present. Additional information regarding the department's rating system was provided to the task force under separate cover.
7. Three principal threats to the PRB fish community have been identified including the discharge of CBM produced water. Produced water discharge is a concern because the species present evolved in a high turbidity, warm water system and the discharge of CBM water could lower water temperatures and lower turbidity which could adversely affect the status of resident fish populations. Changes in water quality could make it easier for invasive species (such as green sunfish) to replace native species.

8. The Game and Fish Department has recently assigned a full-time biologist to coordinate agency involvement in CBM water management planning and permitting.

Wyoming State Engineer's Office – Harry LaBonde

1. The State Engineer's Office presented information regarding their constitutional authority to regulate production and discharge of CBM water including:
• Article 1 which states "water being essential to industrial prosperity, of limited amount, and easy for diversion from its natural channels, its control must be in the state, which, in providing for its use, shall equally guard all the various interests involved"
• Article 8, Section 1 – which states that all water within the boundaries of the state is declared to be the property of the state
• Article 8, Section 2 which provides the State Engineer with authority to supervise the waters of the state and their appropriation, distribution and diversion
• Article 8, Section 3 which states "no appropriation shall be denied except when such denial is determined by the public interest"
2. The State Engineer's Office has not been involved with regulating discharges of water after the beneficial use has taken place.
3. CBM wells require a permit from the State Engineer's Office pursuant to W.S. 41-3-930
4. To date the State Engineer's Office has issued 36,543 CBM well permits.
5. Some wells have been drilled without permits.
6. Interfering appropriations are regulated under W.S. 41-3-911 and 933. It is an express condition of each underground water permit that the right of the appropriator does not include the right to have the water level or artesian pressure at the appropriator's point of diversion maintained at any level or pressure higher than that required for maximum beneficial use. However, the State Engineer's Office does have authority to order interfering appropriators to cease withdrawal if an adjacent affected appropriator has a valid water right, an adequate well and the State Engineer's Office finds unreasonable interference.
7. Interference complaints have not been significant. To date, the State Engineer's Office has received 73 inquiries regarding interference. Only 1 complaint has advanced to a formal investigations. The remaining complaints have been settled before completion of the investigation. The State Engineer's Office stated that CBM operators are doing a good job protecting adjacent groundwater wells.
8. Beneficial use is established by W.S. 41-3-101 which states beneficial use shall be the basis, the measure and limit of the right to use water at all times. As part of all permit applications, the applicant must state their proposed beneficial use.
9. Beneficial use is either consumptive or non-consumptive – the State Engineer's Office considers CBM water production as a non-consumptive use.
10. The State Engineer's Office estimates that to date, based on information provided by the WOGCC, about 460,000 acre-feet of water has been produced from CBM wells in the PRB. Using estimates from the U.S. Geological Survey of total ground water availability, the State Engineer's Office estimates that somewhere between 0.02 (calculated based on porosity) and 1 percent (calculated based on reservoir storage) of the total ground water volume in the Wyoming portion of the PRB has been produced by

CBM operations.
11. Reservoirs are permitted pursuant to W.S. 41-3-301
12. To date, the State Engineer's Office has permitted 3,384 CBM reservoirs.
13. The goal of the reservoir permitting program is to protect downstream senior irrigation water rights by requiring that significant reservoirs be self-regulating or having water administration plans in place.
14. Non-permitted reservoirs are a problem.
15. Three compacts could potentially affect trans-basin transport of CBM water: the Colorado River Compact, the Upper Colorado River Compact, and the Yellowstone River Compact.
16. The Colorado River Compact does not explicitly address ground water nor does it prohibit or require signatory state approval of trans-basin diversions. However, the compact does require the water to beneficially used in the states and basins to which the water is apportioned.
17. Similarly, the Upper Colorado River Compact does not explicitly address ground water nor does it prohibit or require signatory state approval of trans-basin diversion. The compact does require the water to be used in the compact state and the use will be counted against the state's apportionment.
18. The Yellowstone River Compact does not include ground water. However, Article X states "No water shall be diverted from the Yellowstone River Basin without the unanimous consent of all signatory States." It is the position of the State Engineer's Office that Article X relates only to surface water.

Wyoming Department of Environmental Quality – John Wagner

1. WDEQ has several regulatory programs which affect CBM development including:
• WYPDES permits for surface discharges
• UIC permits for injection
• Permits for treatment plants
• Permits for land applications
• Protection of groundwater from reservoir seepage
• On-channel reservoirs bonding
2. WYPDES permits place limits on the quality and quantity of discharges. Limits are placed based on treatment technology and water quality standards based on designated use and classification of receiving streams and antidegradation determinations.
3. In 1997 WDEQ issued just 47 WYPDES permits for CBM – in 2005 the agency issued 951 CBM WYPDES permits. In 2005 new CBM WYPDES permits exceeded the number of WYPDES permits for all other regulated activities statewide.
4. Through 2007 WDEQ predicts the agency will have issued approximately 11,000 WYPDES permits for CBM outfalls.
5. Most CBM discharges in the PRB are to on-channel reservoirs with effluent limits designed to protect designated use.
6. Some CBM discharges occur to off-channel reservoirs where the effluent limits are more relaxed than to on-channel reservoirs and are designed to protect stock and wildlife watering. Reservoir capacity must contain effluent plus 100 year/24 storm event. WOGCC also issues permits for construction of off-channel reservoirs.

7. Approval to discharge untreated effluent to streams are based on assimilative capacity of the receiving waters.
8. The most commonly employed treatment technology is ion exchange which is used to reduce effluent constituents such as iron, SAR, EC and barium.
9. Reverse osmosis is another treatment technology which may be employed in the PRB in the future.
10. Land application of effluent does not require a WYPDES permit if the effluent does not reach surface water. A WDEQ permit to construct is required.
11. Injection of produced water requires a UIC permit. General permits have been issued for injection into the Wasatch, Fort Union, Lance and Fox Hills formations. To date, WDEQ has issued permits for 316 injection wells, only 47 of which were drilled. Only 20 of the injection wells are still active – these wells are capable of handling about 2 percent of CBM water production.
12. Yates is currently drilling a deep Madison injection well which is expected to be able to handle about 20,000 barrels of water/day (about 1.3 percent of CBM produced water). Overall, operators are not confident that additional capacity can be developed with Madison disposal wells.
13. There is an inverse east to west relationship between the sodium adsorption ratio (SAR) from water produced from CBM wells and ambient SAR in surface waters. SAR is used as a measure of sodium content in soils, relative to total salts, CBM produced water SAR is highest in the Tongue River basin while the lowest ambient surface water SAR in the PRB is in the Tongue River basin. Conversely, the lowest CBM produced water SAR is found in the Cheyenne River Basin where ambient SAR is relatively high. The same inverse relationship is found with electrical conductivity (EC) which measures soil salinity.
14. WDEQ has begun a watershed permitting program to allow a holistic approach to regulating discharges and to improve and stream-line the permitting process.
15. To date, WDEQ has issued permits to construct for 44 treatment systems, 10 land applications, and 2 road applications.
16. Three issues may have a major impact on WDEQ's CBM permitting program
• Maycock Decision (lower court decision)
• Montana Antidegradation Regulations
• Powder River Basin Resource Council Petition to the Environmental Quality Council
17. WDEQ is proceeding with watershed based permits in the Tongue, Powder and Little Powder River basins which considers Montana's current standards but does not address Montana's proposed Antidegradation Regulations.
18. Permits in the Cheyenne and Belle Fourche basins are being issued individually and there are no issues with South Dakota.
19. In the North Platte River basin all new discharges must be treated to ambient water quality. Initial contacts have been made with Nebraska.
20. The Little Snake River is subject to Colorado River salinity control requirements – consequently all surface discharges must be treated to 500 mg/l TDS.

BLM – Don Simpson

1. BLM manages 40 million acres through10 field offices and will process 3500 APDs this year and 4900 next year
2. BLM requires compliance with the Federal Land Management Policy Act and manages lands through resource management plans
3. Recent Congressional direction requires BLM to process APDs in 30 days – BLM is striving to meet these deadlines. BLM has restructured several offices (including 2 in Wyoming) in order to improve APD turn-around time.
4. BLM's preferred management option for produced water is injection
5. BLM has jurisdiction from point of origin to point of discharge.

Administrative Issues

For those TF members who have not ever been reimbursed by the state each needs to fill out an application for a tax ID number. If you choose to have reimbursement directly deposited there needs to be a voided check (or a copy of a check with voided written on it) attached to the form. Legislators will be paid by LSO and reimbursed by the CBNG Task Force budget.

Public Comment Received

Nancy Sorenson, rancher – North Powder River Basin, representing herself.
• Water resources must not be wasted.
• Would like to see a comparison of the worth of gas production compared to the value of water being lost
• Waste of water – how much is actually being used vs lost to evaporation – believes there needs to be more focus on beneficial use.
• Concerned about incidental affects on domestic or agricultural wells – what is being done to compensate loss.
• Concerned about damage done to soils by surface discharge. Quality of water has affected soils, but also need to look at quantity of water.
• Use water to recharge damaged wells – small scale.
• Please accept public comment.
• Hopes that the committee will be considered good stewards.

Bob Le Resche – Chairman of the Powder River Resource Basin Council.
• TF leadership will affect the state for many generations. The TF has talked about gas and revenue, but consequences of production will last for a long time.
• Industry has been illogically regulated and has impacted water and land.
• Development can bring good and bad results for a long time.
• There is too much water in a short period of time.
• Livestock and wildlife will use the water.
• Dark side – cities in basin are having a water supply problem.

• Discharged water is destroying pastures.
• Water is being sent outside of state and is wasted.

Bill Wells, Buffalo
• Has been involved for many years.
• Seven years ago tried to get administration to do something like this.
• Wells tried to get funding from Governor Geringer's administration.
• Believes water has more value than gas and is very important to people in agriculture.
• He is willing to help if needed.

Eric Barlow
• Commends wanting to find solution
• He has been failed by the state to find solutions to this issue
• This state has lacked the leadership to solve CBM discharge problems.
• It costs everyone in the state, doesn't want to see more bureaucracy
• Invitation to come to his place to come and take a tour – will go out of his way to help but expects the same.

Elections

Pat Childers was elected Chairman and Chuck Townsend Vice Chair.